

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A device for wet treatment of wafers, comprising:

a first plate;

a second plate substantially parallel to said first plate;

holding means for holding a wafer between said first and said second plate substantially parallel to said plates;

first dispensing means for introducing fluid into a first gap between said first plate and a wafer when being treated;

second dispensing means for introducing fluid into a second gap between said second plate and a wafer when being treated;

at least one vibrating element acoustically coupled to at least said second plate; and

rotating means for rotating said holding means ~~and said second plate relative to each other about an axis substantially perpendicular to said second plate~~

wherein the holding means and the first plate are coupled to each other to form a holding unit, the second plate is

not rotatable, a liquid collector is circumferentially surrounding said holding means for collecting liquid that flows off a wafer during being treated with liquid, and said second plate is sealed against said liquid collector.

2. (previously presented) The device according to claim 1, wherein said plates are substantially horizontally arranged.

3-4. (canceled)

5. (previously presented) The device according to claim 1, wherein the holding means is a gripper provided for securely gripping a wafer.

6-8. (canceled)

9. (previously presented) The device according to claim 1, further comprising means for varying distance from the first plate to the second plate to insert a wafer to the space defined between said two plates and to withdraw a wafer therefrom.

10. (previously presented) The device according to claim 1, further comprising a gap between the wafer and the first

plate of 0.1 mm to 10 mm or 0.5 mm to 5 mm while treating the wafer.

11. (previously presented) The device according to claim 1, further comprising a gap between the wafer and the second plate of 0.1 mm to 10 mm or 0.5 mm to 5 mm while treating the wafer.

12. (previously presented) The device according to claim 1, wherein at least one of said at least one vibrating element is arranged with respect to the surface of the second plate facing the wafer so that ultrasonic waves are substantially directed to the wafer when treated taking an angle α' of 85° to 60° to the plane provided for the wafer.

13. (previously presented) The device according to claim 1, further comprising additional gas dispenser for at least one of said first and second gap.

14. (previously presented) The device according to claim 1, wherein an opening in at least one of said first or second plate does not include the rotational center.

15. (previously presented) The device according to claim 1, wherein at least one vibrating element is arranged to cover the area of the rotational axis.

16. (previously presented) The device according to claim 1, further comprising means for opening and closing holding elements of said holding means during treatment of the wafer.

17. (previously presented) The device according to claim 1, wherein at least one plate at least partly comprises material having a specific sound-propagation velocity greater than that of water.

18. (withdrawn) A method for wet treating a single wafer, comprising:

holding a single wafer in a plane B;

providing a first plate having a plane A facing the wafer thereby creating a first gap of a distance d_1 ;

providing a second plate having a plane C facing the wafer thereby creating a second gap of a distance d_2 ;

inserting a first liquid into said first gap thereby substantially completely filling said first gap;

inserting a second liquid into said second gap thereby substantially completely filling said second gap;

applying ultrasonic energy to said second plate while less than 10% of the ultrasonic energy applied to said second plate is applied to said first plate; and

relatively rotating the wafer and the second plate against each other about a rotation axis substantially perpendicular to the wafer's main surfaces.

19. (canceled)

20. (withdrawn) The method according to claim 18, wherein during term of processing substantially all parts of one wafer side are at least temporarily covered by the second plate.

21. (withdrawn) The method according to claim 18, wherein said second liquid is inserted into said second gap through an opening offset to the rotation axis.

22. (previously presented) A device for wet treatment of wafers, comprising:

a first plate;

holding means for holding a wafer in a certain distance substantially parallel to said first plate;

first dispensing means for introducing fluid into a first gap between said first plate and a wafer when being treated;

at least one vibrating element acoustically coupled to said first plate;

rotating means for rotating said holding means and said first plate relative to each other about an axis substantially perpendicular to said first plate; and

adjustment-elements are provided in order to direct ultrasonic waves at an angle α' of less than 89° to a wafer when treated wherein adjustment-elements comprise an array of a plurality of transducers with at least one ultrasonic generator to separately agitate said plurality of transducers in a phase-shifted way in order to generate an ultrasonic wave directed from said array of transducers at an angle α' of less than 89° .

23. (previously presented) The device according to claim 22, wherein said adjustment-elements comprise a slanted plane or slanted planes wherein at least one of said at least one transducers is placed.

24. (previously presented) The device according to claim 23, wherein said at least one transducer placed in a slanted plane is acoustically coupled to an intermediate liquid chamber, said intermediate liquid chamber is further acoustically coupled to said first plate.

25. (previously presented) The device according to claim 24, wherein said intermediate liquid chamber includes an annular duct and an annular gas suction nozzle.

26. (canceled)

27. (previously presented) The device according to claim 22, wherein said array of transducers is a two dimensionally arranged plurality of transducers.

28. (previously presented) The device according to claim 22, wherein a quotient of a distance a of the first plate to a wafer surface facing said first plate and a mean distance d between centers of two adjacent transducers of the array is greater than 5 ($a/d > 5$).

29. (previously presented) The device according to claim 22, wherein a mean distance d between centers of two adjacent transducers of the array is smaller than 2 mm.

30. (previously presented) The device according to claim 22, wherein a width D of the array of transducers is at least three times as big as the distance d_1 of the first plate to the wafer surface facing said first plate ($D \geq 3 \cdot d_1$).

31. (previously presented) A device for wet treatment of wafers, comprising:

a first plate;

holding means for holding a wafer in a certain distance substantially parallel to said first plate;

first dispensing means for introducing fluid into a first gap between said first plate and a wafer when being treated;

at least one vibrating element acoustically coupled to said first plate;

rotating means for rotating said holding means and said first plate relative to each other about an axis substantially perpendicular to a second plate;

adjustment-elements provided in order to direct ultrasonic waves at an angle α' of less than 89° to a wafer when treated with said second plate substantially parallel to said first plate and second dispensing means for introducing fluid into a second gap between said second plate and a wafer when being treated.

32. (withdrawn) A method for wet treating a single wafer, comprising:

holding a single wafer in a plane B;

providing a first plate having a plane A facing the wafer thereby creating a first gap of a distance d_1 ;

inserting a first liquid into said first gap thereby substantially completely filling said first gap;

applying ultrasonic energy to said first plate so that ultrasonic energy is applied to said plane B in an angle α' of less than 89° ; and

relatively moving wafer and first plate against each other along a direction substantially parallel to the wafer's main surfaces wherein said ultrasonic energy applied to said first plate so that ultrasonic energy is applied to said plane B in an angle α' of less than 89° is generated an array of a plurality of transducers with at least one ultrasonic generator to separately agitate said plurality of transducers in a phase-shifted way in order to generate an ultrasonic wave directed from said array of transducers at an angle α' of less than 89° .

33. (withdrawn) A method for wet treating a single wafer, comprising:

holding a single wafer in a plane B;

providing a first plate having a plane A facing the wafer thereby creating a first gap of a distance d_1 ;

inserting a first liquid into said first gap thereby substantially completely filling said first gap;

applying ultrasonic energy to said first plate so that ultrasonic energy is applied to said plane B in an angle α' of less than 89° ; and

relatively moving said wafer and said first plate against each other along a direction substantially parallel to the wafer's main surfaces wherein said relative movement of said wafer and said first plate against each other along the direction substantially parallel to the wafer's main surfaces is carried out by relatively rotating said wafer and a second plate against each other about a rotation axis substantially perpendicular to the wafer's main surfaces.

34. (withdrawn) The method according to claim 32, further comprising:

providing a second plate having a plane C facing the wafer thereby creating a second gap of a distance d_2 ; and

inserting a second liquid into said second gap thereby substantially completely filling said second gap.

35. (withdrawn) The method according to claim 32, wherein during a term of processing substantially all parts of one wafer side are at least temporarily covered by a second plate.

36. (canceled)

37. (withdrawn) The method according to claim 32, wherein angle α' is varied during the wafer being treated with liquid.